AUTO ALLIANCE

DRIVING INNOVATION®

Integrated Systems Help Drivers Keep "Eyes-on-the-Road"

- **Automaker-integrated features are designed for use in the driving environment.** Whether it's a quick, important, phone call or updated driving directions, when a device is integrated into the vehicle's driver-vehicle interfaces (including visual displays and speakers) it's designed to be used in a way that allows the driver to maintain focus on driving the automobile. People are going to have conversations, read maps and directions, and listen to music while they drive – and automakers have worked to make sure this can be done while still maintaining focus on the road.

- **Using laboratories, high-tech simulators, proving grounds and much more, automakers design integrated features – from the very start – that help drivers keep their "eyes-on-the-road."** Functions that might overload a driver, such as viewing a movie or typing a message, are made inaccessible to the driver while a vehicle is moving. "Eyes-on-the-road" is critical to safe driving. A recent study found that 80 percent of all crashes involved the driver looking away from the forward roadway just prior to the crash. (Virginia Tech Transportation Institute's 100-Car Naturalistic Study).

- **Guidance systems help drivers focus on the road, not their maps.** GPS systems, which can communicate directions a driver would otherwise try to read from an open map, are engineered to work as safely as possible in the driving environment. Easy-to-understand graphics and audio commands provide drivers with precise information without requiring them to divert their attention away from the road. And with technology, if a driver misses a turn or deviates from the programmed route, navigation systems will automatically develop and provide directions to get back on course… without the driver having to re-orient with a map.

- **Integrated systems are designed to interact with other vehicle features and functions in ways to facilitate safe use by drivers.** Controls and displays are designed and positioned, sometimes near or on the steering wheel, to help drivers keep their "eyes-on-the-road." Integrated technology also means systems may prioritize what types of messages are displayed to the driver while the vehicle is moving. For example, a safety-related message will have priority over other information within the integrated system.

- **Integrated hands-free systems help drivers focus on the road.** Hands-free technology allows a driver to operate the system using verbal commands. Hands-free systems may also automatically adjust the radio volume when a user calls 911, or makes another call. Or they may make it possible for a driver to know who is calling through an easy-to-read caller I.D. display, accept the call and turn down the radio volume all with one quick

action. And possibly without requiring the driver to reach away from the steering wheel to do all of those things at once.

- **Automakers develop built-in protections for the safe use of new technologies.** Some technologies are designed to work only when the vehicle is stopped. With a "nomadic" or "carry-in" device that a driver brings into the vehicle, there's no way to control when it's in use. However, integrated systems can present an added safeguard that blocks certain, nonessential functions when a vehicle is moving.

- **Alliance members also carefully control how displays function in a vehicle in motion.** Screens suspend automatically scrolling text or constantly-changing images while the vehicle is in motion. Directional guidance, for example, may be presented in static, easily-understood displays while the car is in motion, rather than a complex or animated image that would require more attention. The size of the display, lettering and icons, as well as the contrast and brightness, are designed to be easily legible to the driver. In-vehicle displays may also automatically switch to a "nighttime" setting to improve visibility when the vehicle enters a dark tunnel, or when the headlights turn on at night. And in bright situations, an in-vehicle display's readability may be enhanced because the automaker has used glare-resistant material and a matte finish for the plastic viewing screen.

- **Integrating a "carry-in" device into the vehicle system allows the auto to serve as a "safety filter."** Integrating (or connecting) a music player, for example, into the vehicle's hard-wired system can allow a device's information to be presented in the auto's integrated display. That means the driver doesn't have to look away from the roadway to concentrate on, for example, a cell phone's small display screen, which was never designed to be used while driving. When presented in the vehicle's instrument cluster, the information can be organized in a way that helps drivers keep their "eyes-on-the-road." Information can be understood more quickly than it could be when displayed directly on the portable device. In fact, some studies have shown that the task of selecting and playing a song takes a driver more than 30 seconds on a standard music player, while an in-vehicle system can reduce that same task to less than five seconds. And to even further reduce potential distractions, often the connection port location is in the glove compartment, within an armrest, or otherwise arranged in a way that puts the device entirely out of the driver's view.